REMARKS

This Amendment is in response to the outstanding Office Action dated September 9, 2004. Claims 1, 6, 12, 31 have been amended. The claims now pending in the application are 1 through 17, and 31 through 33 of which Claims 1, 12, and 31 are independent claims. Reconsideration of the application, as amended, is respectfully requested.

The Examiner rejected Claims 1 through 16 under 35 U.S.C. § 102(e) as being anticipated by PCT Patent WO 01/70450 to Stewart. The Examiner rejected Claim 17 under 35 U.S.C. § 103(a) as being unpatentable over Stewart in view of Weaver. Amended Claims 1 and 12 and new Claims 31 through 33 overcome these rejections.

Amended Claim 1 defines the invention as a method of making a tool for molding a part such that the tool has a channel formed therein to provide the flow of fluid for heating/cooling the molded part. The method includes providing a plurality of tool sections in an unhardened state and having facing surfaces. Each of a number of the tool sections has at least one of a groove formed in the facing surface thereof. The tool sections are assembled with the facing surfaces thereof in facing relationship to form a tool block wherein the grooves form at least one channel in the tool block. The channel is formed with at least one inlet and outlet at outer edges of the tool sections to provide the flow of fluid through the channel. The facing surfaces of the adjacent tool sections are diffusion bonded by pressing the tool sections together at an elevated temperature to form a tool block. The tool block is then machined to form a final tool shape.

Amended Claim 12 defines the invention as a method of making a tool for molding a part such that the tool has a channel formed therein to provide the flow of fluid for heating/cooling the molded part. The method includes cutting a body of tool material in an annealed state into layers with opposing facing surfaces. At least one of a groove in the facing surface thereof is formed in each of a number of the layers. The layers are assembled in facing relationship so that the grooves form at least one channel in the assembled layers wherein the channel is formed with at least one inlet and outlet at outer edges of the tool sections to provide the flow of fluid through the

channel. Facing surfaces of the adjacent layers are diffusion bonded by pressing the layers together at an elevated temperature to form a tool block. The tool block is then machined to form a final tool shape.

Amended Claim 31 defines the invention as a method of making a tool for molding a part including providing a plurality of tool sections in an unhardened state. Each of a number of the tool sections has a groove along a facing surface thereof. The tool sections are assembled with the facing surfaces thereof in facing relationship to form a tool block wherein the grooves form at least one channel in the tool block. The channel is formed with at least one inlet and outlet at outer edges of the tool sections to provide the flow of fluid through the channel along the facing surfaces. The facing surfaces of the adjacent tool sections are then diffusion bonded by pressing the tool sections together at an elevated temperature.

Amended Claims 1, 12 and 31 also define the method of the invention as including machining a tool block that has been formed from tool sections diffusion bonded together to form a final tool shape. The Stewart reference teaches cutting a weldable material into a plurality of mold zones, machining surface profiles into the mold zones, then welding the mold zones together. In addition, the Stewart reference teaches a hole cut through the thickness of multiple mold zones. Each hole through each of the multiple mold zones is cut in a straight path through each mold zone. The holes through each of the multiple mold zones can be angled relative to the surface profile of the mold to approximate a curved surface of the surface profile. The mold zones are then aligned and welded to one another, such that the ends of the holes are aligned to form channels through the tool block in a plane generally perpendicular to length of the mold zones. The holes form channels such that fluid flows through the mold perpendicular to the cut and reassembled surfaces of the mold zones.

The Stewart reference does not teach or suggest forming grooves that are formed on facing surfaces of the tool sections, particularly wherein the grooves form channels having inlets and outlets at the outer edges of the tool sections. The channels according to the present invention have travel paths that extend substantially along the tool section lines. This is directly contrary to that which is shown in Stewart. The

channels of Stewart have travel paths that are substantially across the tool section lines. This is an important distinction due to the manner in which such channels can be formed in each tool section, and with how the multiple tool sections are aligned and joined to form a channel along the tool section (as with the claimed invention) or across tool sections (as in Stewart). Stewart only enables the forming of the transverse channels in the tool sections. There is no enabling language in Stewart to form channels that are formed along tool section lines and that have inlets and outlets at the outer edges of at least one tool section. Therefore, Stewart does not teach a groove along a surface of tool sections, such that a channel is formed so that the flow of fluid through the channel is along the surfaces of the tool sections. Thus, Claims 1, 12 and 31 are believed to be patentable over the cited references.

Additionally, the channels according to the present invention are more easily configured to conform to the desired shape or channel configuration. Drilling holes in a transverse manner as shown in Stewart through multiple tool sections requires precision while forming the shape of the channel and requires greater accuracy when aligning the tool sections section prior to bonding them together to form a continuous channel. The grooves of the present invention can be formed more easily having the desired conformal configuration since substantially the entire path of the channel can be seen while the groove is being formed rather than relying on perfect alignment to create a channel as is required with the Stewart.

For at least these reasons, it is respectfully submitted that Claims 1, 12 and 31 are allowable over the applied art. Claims 2 through 11 contain all of the limitations of Claim 1 and Claims 13 through 17 contain all of the limitations of Claim 12 and are therefore also allowable. Claims 32 and 33 depend from Claims 1 and 12, respectively, and contain limitations similar to the limitations of new Claim 31. For the reasons detailed above with respect to Claims 1, 12, and 31, it is believed that Claims 32 and 33 are patentable over the cited references.

In view of the above remarks and amendments, it is believed that pending Claims 1 through 17 and 31 through 33 are patentable over the cited references and that the application is in condition for allowance.